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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/810,186

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EXAMINER

YUN, EUGENE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/810,186	Applicant(s) MOORTI ET AL.	
	Examiner EUGENE YUN	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 10-14, 22-26 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonta et al. (US 5,740,526) in view of Anderson (US 7,324,783) and Greer et al. (US 7,253,779).

Referring to Claim 1, Bonta teaches a method for choosing at least one signal path, the method comprising:

Determining a signal quality metric for each of a plurality of signal paths (see col. 2, lines 53-57); and

Selecting at least one of said plurality of signal paths for receiving a signal, wherein said selecting is based on the at least one of the signal quality metric (see col. 2, line 62 to col. 3, line 4).

Bonta does not teach modifying the determined signal quality metric for a signal path. Anderson teaches modifying the determined signal quality metric for a signal path (see col. 7, lines 29-46 noting that this process can be applied to all antenna elements of Bonta). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Anderson to said device of

Art Unit: 2618

Bonta in order to provide a more accurate method of measuring signal quality in order to ensure the best quality signal.

The combination of Bonta and Anderson does not teach selecting at least one of said plurality of signal paths for receiving a signal, wherein said selecting is based on at least one of the modified signal quality metrics. Greer teaches selecting at least one of said plurality of signal paths for receiving a signal, wherein said selecting is based on at least one of the modified signal quality metrics (see col. 12, line 59 to col. 13, line 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Greer to the modified device of Bonta and Anderson in order to improve performance when multi antennas are used.

Claim 13 has similar limitations as claim 1.

Referring to Claim 25, Bonta teaches a system for choosing at least one signal path, the system comprising:

At least one processor that determines a signal quality metric for each of a plurality of signal paths (see col. 2, lines 53-57); and

The at least one processor enables selecting of at least one of said plurality of signal paths for receiving a signal, wherein said selecting is based on the at least one of the modified signal quality metrics (see col. 2, line 62 to col. 3, line 4).

Bonta does not teach modifying the determined signal quality metric for a signal path. Anderson teaches modifying the determined signal quality metric for a signal path (see col. 7, lines 29-46 noting that this process can be applied to all antenna elements of Bonta). Therefore, it would have been obvious to one of ordinary skill in the art at the

Art Unit: 2618

time the invention was made to provide the teachings of Anderson to said device of Bonta in order to provide a more accurate method of measuring signal quality in order to ensure the best quality signal.

The combination of Bonta and Anderson does not teach selecting at least one of said plurality of signal paths for receiving a signal, wherein said selecting is based on at least one of the modified signal quality metrics. Greer teaches selecting at least one of said plurality of signal paths for receiving a signal, wherein said selecting is based on at least one of the modified signal quality metrics (see col. 12, line 59 to col. 13, line 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Greer to the modified device of Bonta and Anderson in order to improve performance when multi antennas are used.

Referring to Claims 2, 14, and 26, Bonta also teaches cycling through at least one of the signal paths (see col. 3, lines 28-35 noting the cycling through antennas 101-106).

Referring to Claims 10, 22, and 34, Bonta also teaches one or more of a power level characteristic, a packet error rate characteristic, a bit error rate characteristic, a propagation channel characteristic, and/or an interference level characteristic (see col. 4, lines 5-9).

Referring to Claims 11, 23, and 35, Bonta also teaches at least one of the plurality of signal paths comprising an antenna (see antennas in 101-106 in fig. 1).

Referring to Claims 12, 24, and 36, Anderson also teaches a receive signal path and a transmit signal path (see two way path 620 in fig. 6).

3. Claims 3-9, 15-21, and 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonta, Anderson, and Greer, and further in view of Hiben et al. (US 5,465,410).

Referring to Claims 3, 15, and 27, the combination of Bonta, Anderson, and Greer, does not teach biasing the signal quality metric for each of the signal paths. Hiben also teaches biasing the signal quality metric for each of the signal paths (see col. 3, lines 62-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teachings of Hiben to the modified device of Bonta, Anderson, and Greer in order to provide a more efficient method of selecting the best quality signal.

Referring to Claims 4, 16, and 28, Hiben also teaches increasing the signal quality metric for each of the plurality of signal paths by a fixed amount (see col. 3, lines 62-67).

Referring to Claims 5, 17, and 29, Hiben also teaches increasing the signal quality metric for each of the plurality of signal paths by a predetermined amount (see col. 3, lines 62-67).

Referring to Claims 6, 18, and 30, Hiben also teaches dynamically changing the signal quality metric for each of the plurality of signal paths (see col. 2, lines 42-47).

Referring to Claims 7, 19, and 31, Hiben also teaches decreasing the signal quality metric for each of the plurality of signal paths by at least one of a fixed amount and a predetermined amount (see col. 3, lines 62-67).

Referring to Claims 8, 20, and 32, Hiben also teaches selecting a signal path with a signal quality metric greater than at least one modified signal quality metric (see col. 4, lines 3-8).

Referring to Claims 9, 21, and 33, Hiben also teaches selecting a signal path with a signal quality metric less than at least one modified signal quality metric (see col. 4, lines 3-8).

Response to Arguments

4. Applicant's arguments filed 5/22/2009 have been fully considered but they are not persuasive.

The applicant argues that the Greer reference does not teach "selecting at least one of said plurality of signal paths for receiving a signal, wherein said selecting is based on at least one of the modified signal quality metrics". The examiner disagrees for the following reasons.

Firstly, according to the cited passage in the Greer reference (col. 12, line 59 to col. 13, line 10), each antenna has its own signal path. That means that the selecting of an antenna to receive a signal is the same as the selecting of a signal path to receive a signal.

Looking more in depth into the cited passage, it is shown in col. 13, lines 8-10 that the signal quality metric is either maximized or minimized. According to the examiner, that is the same as the signal quality metric being modified. The examiner

Art Unit: 2618

believes at this time that more specifics regarding to how the signal quality metric is modified is needed in the claims in order to overcome the Greer reference.

Regarding the arguments about the references being uncombinable, the examiner's intention was not to modify the Bonta reference, but to modify the Anderson reference with the combination of the Bonta and Greer references. Since both the Bonta and Greer references teach multiple antenna elements as well as modifying signal quality metrics (as now proved in Greer stated above), the combination of the Bonta and Greer references can be properly combined with the Anderson reference in order to benefit the operation of the device in Anderson.

For the above reasons, the examiner stands by his rejection.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENE YUN whose telephone number is (571)272-7860. The examiner can normally be reached on 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571)272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eugene Yun
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